

Trial Exhibits of Defendants

United States District Court
Eastern District of Texas

OPTIS WIRELESS TECHNOLOGY, LLC, ET AL

Defendants' Trial Exhibit List - Bench Trial Only
PUBLIC VERSION

v.

Case Number: 2:17-CV-00123-JRG-RSP

HUAWEI DEVICE (SHENZHEN) CO., LTD.

Presiding Judge Hon. Rodney Gilstrap				Plaintiff's Attorney Sam Baxter/Theodore Stevenson III/Kevin Burgess/Kevin Hess/Christine Woodin		Court Reporter Shelly Holmes
Trial Date(s) 8/27/2018				Defendant's Attorney Robert Haslam/Stanley Young		Court Deputy Jan Lockhart
PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 001				Huawei Ascend Mate2 User Guide	HWPO_00005000-00005104
	DX 002				Huawei Ascend XT User Guide	HWPO_00005105-00005218
	DX 003				Huawei GX8 User Guide	HWPO_00005309-00005397
	DX 004				Honor 5X User Guide	HWPO_00005402-00005485
	DX 005				Honor 6X User Guide	HWPO_00005591-00005735
	DX 006				Honor 8 User Guide	HWPO_00005736-00005772
	DX 007				Huawei Mate 9 User Guide	HWPO_00006368-00006572
	DX 008				Huawei P8 lite User Guide	HWPO_00007068-00007147
	DX 009				Huawei H891L User Guide	HWPO_00007229-00007378
	DX 010				Huawei H710VL User Guide	HWPO_00007430-00007521
	DX 011				R2-072578/3GPP TSG-RAN WG2 #58bis	HWPO_00016806-00016808
	DX 012				Nexus User Guide	HWPO_00106216-00106277
	DX 013				3GPP TS 36.302 v8.2.1	HWPO_00182740-00182757
	DX 014				International Telecommunication Union, Report ITU-R M.2370-0: IMT traffic estimates for the years 2020 to 2030 (July 2015)	HWPO_00182758-00182808
	DX 015				Withdrawn	

PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 016				Withdrawn	
	DX 017				4G LTE/LTE-Advanced for Mobile Broadband	POHW_00074545-00074991
	DX 018				Farooq Khan, LTE for 4G Mobile Broadband Air Interface Technologies and Performance	POHW_00074992-00075500
	DX 019				LTE The UMTS Long Term Evolution - From Theory to Practice	POHW_00075838-00076463
	DX 020				3GPP TS 36.321 V9.6.0 (2012-03)	POHW_00103884-00103931
	DX 021				3GPP TS 36.212 v8.8.0 (2009-12)	POHW_00105177-00105241
	DX 022				3GPP TS 36.211 v8.9.0 (2009-12)	POHW_00105577-00105659
	DX 023				3GPP TS 36.213 v8.8.0 (2009-09)	POHW_00105660-00105736
	DX 024				3GPP TS 36.321 v8.12.0 (2012-03)	POHW_00105737-00105783
	DX 025				Withdrawn	
	DX 026				MainWindow.xaml.cs from SimLTE-Uplink.zip	
	DX 027				MobileApp.cs from SimLTE-Uplink.zip	
	DX 028				UserElement.cs from SimLTE-Uplink.zip	
	DX 029				Withdrawn	
	DX 030				Withdrawn	
	DX 031				U.S. Patent No. 6,317,430 to Knisely et al.	HWPO_00009065-00009075
	DX 032				Withdrawn	
	DX 033				Qinqing Zhang and S. A. Kassam, "Hybrid ARQ with selective combining for fading channels," in IEEE Journal on Selected Areas in Communications, vol. 17, no. 5, pp. 867-880, May 1999	HWPO_00009802-00009815
	DX 034				Withdrawn	
	DX 035				Withdrawn	
	DX 036				Withdrawn	
	DX 037				U.S. Patent No. 6,895,057 to Balachandran et al.	HWPO_00009527-00009541
	DX 038				U.S. Patent No. 6,671,851 to Moulsley	HWPO_00009409-00009417
	DX 039				3GPP TS 36.201 V8.0.0 (2007-09)	HWPO_00015813-00015825
	DX 040				3GPP TS 36.212 V8.0.0 (2007-09)	HWPO_00015826-00015855
	DX 041				3GPP TS 36.213 V8.0.0 (2007-09)	HWPO_00015856-00015868
	DX 042				3GPP TS 36.321 V1.0.0 (2007-09)	HWPO_00015869-00015886
	DX 043				3GPP TS 36.321 V2.0.0 (2007-11)	HWPO_00015887-00015909
	DX 044				R1-073870/3GPP TSG-RAN WG1 #50	HWPO_00015970-00015972
	DX 045				3GPP TR 25.858 V5.0.0 (2002-03)	HWPO_00015989-00016019

PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 046				Withdrawn	
	DX 047				Withdrawn	
	DX 048				U.S. Patent No. 7,388,848 ("Virtnanen")	HWPO_00016200-00016210
	DX 049				U.S. Patent No. 7,426,201 ("Kim")	HWPO_00016211-00016231
	DX 050				Withdrawn	
	DX 051				Withdrawn	
	DX 052				Withdrawn	
	DX 053				U.S. Patent Pub. No. 2008/0313521 ("Frederiksen")	HWPO_00016441-00016452
	DX 054				U.S. Patent No. 7,808,955 ("Dottling")	HWPO_00016582-00016601
	DX 055				U.S. Patent Pub. No. 2006/0227789 to Dottling et al.	HWPO_00016342-00016352
	DX 056				R1-061776/3GPP TSG RAM WG1 LTE Ad Hoc	HWPO_00016755-00016757
	DX 057				R2-050956/3GPP TSG-RAN WG2 meeting #46bis	HWPO_00016758-00016760
	DX 058				R2-052024/3GPP TSG-RAN WG2 Meeting #48	HWPO_00016761-00016762
	DX 059				R2-052076/3GPP TSG RAN WG2 Meeting #48	HWPO_00016763-00016795
	DX 060				R2-060829/3GPP TSG RAN WG2 Meeting #52	HWPO_00016796-00016800
	DX 061				U.S. Patent Pub. No. 2006/0280145	HWPO_00174410-00174417
	DX 062				Withdrawn	
	DX 063				http://www.3gpp.org/ftp/specs/archive/25_series/25.309/	HWPO_00174419
	DX 064				3GPP Webpage of TS 25.309	HWPO_00174420
	DX 065				3GPP FTP Server	HWPO_00174422-00174425
	DX 066				3GPP Email Archive	HWPO_00174426-00174435
	DX 067				3GPP FTP Server /ftp/tsg_ran/wg2_rl2/TSGR2_54/Documents/	HWPO_00174436-00174445
	DX 068				3GPP Email Archive 3GPP_TSG_RAN_WG2 Archives	HWPO_00174446-00174455
	DX 069				3GPP FTP Server /ftp/tsg_ran/wg2_rl2/TSGR2_46bis/Documents	HWPO_00174456-00174462
	DX 070				3GPP Email Archive	HWPO_00174463-00174472
	DX 071				Radio Operator's Manual	HWPO_00174564-00174636
	DX 072				3GPP Webpage of TS 25.309 V6.3.0	HWPO_00175355-00175356
	DX 073				Withdrawn	
	DX 074				Meeting Summary of 3GPP TSG RAN WG2 Meeting #48, held in London, England on August 29-September 2, 2005	HWPO_00175406
	DX 075				Document listing for 3GPP TSG RAN WG2 Meeting #48, held in London, England on August 29-September 2, 2005	HWPO_00175418
	DX 076				3GPP FTP Server of TS 25.309 V6.3.0	HWPO_00175613

PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 077				3GPP FTP Server /ftp/tsg_ran/wg2_rl2/TSGR2_48/Documents	HWPO_00175614-00175622
	DX 078				Withdrawn	
	DX 079				Withdrawn	
	DX 080				U.S. Patent No. 8,477,695 ("Zhang")	HWPO_00016852-00016859
	DX 081				3GPP TS 25.309 V6.6.0 (2006-03)	HWPO_00016629-00016662
	DX 082				U.S. Patent No. 8,576,784 ("Lohr")	HWPO_00016860-00016879
	DX 083				3GPP TSG RAN WG2 #54 (Aug. 28-Sept. 1, 2006) R2-062164	HWPO_00016801-00016805
	DX 084				PanOptis' First Supplemental Responses to Huawei's First Set of Interrogatories (March 19, 2018)	
	DX 085				PanOptis' Responses to Defendants' First Set of Interrogatories	
	DX 086				PanOptis' Responses to Defendants' Second Set of Interrogatories	
	DX 087				[REDACTED]	[REDACTED]
	DX 088				3GPP TSG RAN WG1#51 bis, R1-080267, PUSCH multiplexing of data, control, and ACK/NACK information	HWPO_00171596-0017614
	DX 089				3GPP TSG RAN WG1#52, R1-081004, Multiplexing of ACK/NACK in PUSCH	POHW_00076665-0076668
	DX 090				3GPP TSG RAN WG1#52, R1-081005, Multiplexing of Control and Data in PUSCH	POHW_00076669-0076685
	DX 091				U.S. Patent Application No. 60/988,433	HWPO_00169764-00169850
	DX 092				Withdrawn	
	DX 093				Withdrawn	
	DX 094				U.S. Patent Application No. 60/972,244	
	DX 095				U.S. Patent Application No. 60/987,427	HWPO_00169615-00169697
	DX 096				LISTSERV 16.0 - 3GPP TSG RAN WG1 Archives	
	DX 097				[REDACTED]	[REDACTED]
	DX 098				MPEG LA AVC Patent Portfolio License Briefing	HWPO_00143804-00143814

PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 099				Cyber Creative Institute Co. Ltd., Evaluation of LTE Essential Patents Declared to ETSI (Version 3.0)	HWPO_00145055-00145087
	DX 100			8/20/2018	PA Consulting Group, LTE Essential IPR, PA's 3GPP-LTE Database and Report (March 31, 2014)	HWPO_00145357-00145558
	DX 101				Huawei website - Techology -> IPR	HWPO_00149413
	DX 102				[REDACTED]	[REDACTED]
	DX 103				2012 Smartphone Guide, Nomura	HWPO_00175749
	DX 104				3GPP specification series LTE, 3gpp.org	HWPO_00176072-00176078
	DX 105				[REDACTED]	[REDACTED]
	DX 106				LTE Encyclopedia, sites.google.com	HWPO_00179316-00179320
	DX 107				[REDACTED]	[REDACTED]
	DX 108				State of LTE - Global 2013-Q4, OpenSignal, Feb. 2014	HWPO_00181279-00181285
	DX 109				State of Mobile Networks - USA 2015-Q4, OpenSignal, Jan. 2016	HWPO_00195449
	DX 110				State of Mobile Networks - USA 2016-Q2, OpenSignal, Aug. 2016	HWPO_00195450
	DX 111				State of Mobile Networks - USA 2016-Q4 OpenSignal, Feb. 2017	HWPO_00195451
	DX 112				State of Mobile Networks - USA 2017-Q2, OpenSignal, Aug. 2017	HWPO_00195452
	DX 113				State of Mobile Networks - USA 2017-Q4, OpenSignal, Jan. 2018	HWPO_00195453
	DX 114				Summary of 3GPP Standards Releases for LTE, unwiredinsight.com	HWPO_00181331-00181333
	DX 115				The Kirin 950, Cortex A72 Performance & Power - The Huawei Mate 8 Review, anandtech.com	HWPO_00182430-00182440
	DX 116				Excerpts from IDC Sales Data (LG)	HWPO_00194835-00194837
	DX 117				AVC Patent Portfolio License	MPEGLA_00000166-199
	DX 118				AVC Attachment 1	MPEGLA_00002750-863
	DX 119				PanOptis (PowerPoint Presentation)	POHW_00007120-00007146
	DX 120				PanOptis (PowerPoint Presentation)	POHW_00007173-00007197
	DX 121				PanOptis (PowerPoint Presentation)	POHW_00007198-00007222
	DX 122				PanOptis (PowerPoint Presentation)	POHW_00007223-00007249

PLF NO.	DEF NO.	DATE OFFERED	MARKED	ADMITTED	DESCRIPTION OF EXHIBITS	BATES RANGE
	DX 123				[REDACTED]	
	DX 124				[REDACTED]	
	DX 125				[REDACTED]	
	DX 126				[REDACTED]	
	DX 127				[REDACTED]	
	DX 128				[REDACTED]	
	DX 129				[REDACTED]	
	DX 130				[REDACTED]	
	DX 131				[REDACTED]	
	DX 132				Withdrawn	
	DX 133				Withdrawn	
	DX 134				Withdrawn	
	DX 135				PanOptis' Responses to Defendants' Second Set of Requests for Admission	
	DX 136				Plaintiffs' First Amended Responses to Defendants' First Set of Interrogatories	

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	DX 137				Ericsson Press Release of April 14, 2008 "Wireless Industry Leaders commit to framework for LTE technology IPR licensing"	HWPO_00145876-00145879
	DX 138			8/22/2018	Ericsson website - Licensing Programs	HWPO_00145880-00145881
	DX 139					
	DX 140				Withdrawn	
	DX 141				How much cellular and Wi-Fi data are smartphone users consuming, and with which apps? The Verizon, AT&T, T-Mobile and Sprint Q4 2016 breakdown, FierceWireless	HWPO_00194829-00194834
	DX 142				PDCCCHmapping.r	
	DX 143				HTC One (M8) User Guide	HTCA-001863-2159
	DX 144				HTC One (M9) User Guide	HTCA-004321-4603
	DX 145				HTC 10 User Guide	HTCA-000951-1223
	DX 146				HTC US Sales Data	HTCA-005969
	DX 147				May 8, 2012 Ericsson Press Release	HWPO_00174339-00174340
	DX 148				September 23, 2014 Ericsson Press Release	HWPO_00174341-00174343
	DX 149				LG Tribute Product Description	HWPO_00171781
	DX 150				LG G2 Product Description	HWPO_00173305
	DX 151				LG G3 Product Description	HWPO_00171780
	DX 152				LG G5 User Guide	HWPO_00172698-00172887
	DX 153				LG G6 User Guide	HWPO_00172888-00173094
	DX 154					
	DX 155					
	DX 156					
	DX 157					
	DX 158				3GPP TSG-RAN WG2 #58bis (25-29 June 2007) Tdoc R2-072578	HWPO_00016806-00016808
	DX 159				Withdrawn	
	DX 160				Withdrawn	

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	DX 161				H.264/AVC Table 9-5	
	DX 162				https://android.googlesource.com/device/generic/goldfish/+/android-4.3_r1/camera/media_codecs.xml	HWPO_00195000-00195002
	DX 163				https://android.googlesource.com/device/generic/goldfish/+/android-7.0.0_r1/camera/media_codecs.xml	HWPO_00195003-00195005
	DX 164				https://android.googlesource.com/device/huawei/angler/+/android-7.0.0_r1/media_codecs.xml	HWPO_00195010-00195015
	DX 165				https://android.googlesource.com/device/samsung/tuna/+/android-4.3_r1/media_codecs.xml	HWPO_00195016-00195018
	DX 166				https://android.googlesource.com/platform/build/+/android-4.3_r1/target/board/generic/device.mk	HWPO_00195447
	DX 167				https://android.googlesource.com/platform/build/+/android-7.0.0_r1/target/board/generic/device.mk	HWPO_00195448
	DX 168				https://android.googlesource.com/platform/frameworks/av/+/android-4.3_r1/media/libstagefright/ACodec.cpp	HWPO_00195019-00195102
	DX 169				https://android.googlesource.com/platform/frameworks/av/+/android-4.3_r1/media/libstagefright/OMXCodec.cpp	HWPO_00195273-00195350
	DX 170				https://android.googlesource.com/platform/frameworks/av/+/android-7.0.0_r1/media/libstagefright/ACodec.cpp	HWPO_00195103-00195249
	DX 171				https://android.googlesource.com/platform/frameworks/av/+/android-7.0.0_r1/media/libstagefright/MediaCodecList.cpp	HWPO_00195250-00195272
	DX 172				https://developer.android.com/reference/android/media/MediaCodec.html	HWPO_00195351-00195434
	DX 173				https://developer.android.com/reference/android/media/MediaCodecList.html	HWPO_00195435-00195446
	DX 174				https://source.android.com/devices/media/	HWPO_00195006-00195009
	DX 175				https://source.android.com/setup/develop/new-device	HWPO_00194993-00194999
	DX 176				JM decoder files.zip	
	DX 177				Withdrawn	
	DX 178				read_log_vlc.m - MATLAB script	
	DX 179				Withdrawn	
	DX 180				Withdrawn	
	DX 181				Withdrawn	
	DX 182				P3's U Get App - Tracking My Wireless Experience, rcrwireless.com	HWPO_00194838-00194841

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	DX 183				State of Mobile Networks - USA, opensignal.com, February 2016	HWPO_00194842-00194851
	DX 184				T-Mobile Squeaks Past Verizon for Title of Fastest LTE Network, theverge.com	HWPO_00194967-00194969
	DX 185				U get App Data Description Screenshots	HWPO_00194970
	DX 186				U.S. Consumers Time Spent on Mobile Crosses 5 Hours a Day, Flurry Analytics	HWPO_00194971-00194975
	DX 187				What You See, uget-app.com	HWPO_00194976-00194980
	DX 188				Which Carrier Runs the Fastest 4G LTE Network in America, clark.com	HWPO_00194981-00194989
	DX 189				Withdrawn	
	DX 190				Communications Standards Review, Volume 12, Number 48: Report of JVT and VCEG: Q6/16 and ISO/IEC JTC1/SC29/WG11 Meeting, December 4–6, 2001, Pattaya, Thailand	HWPO_00009912-00009929
	DX 191				Communications Standards Review, Volume 13, Number 3: Report of Joint Video Team (JVT) Meeting #2, ISO/IEC JTC1/SC29/WG11 (MPEG) and ITU-T SG16 Q6 (VCEG), January 29–February 1, 2001, Geneva, Switzerland.	HWPO_00009946-00009983
	DX 192				Communications Standards Review, Volume 13, Number 25: Report of Joint Video Team (JVT) Meeting #3, ISO/IEC JTC1/SC29/WG11 (MPEG) and ITU-T SG16 Q6 (VCEG), May 6–10, 2002, Fairfax, VA	HWPO_00009984-00010035
	DX 193				JVT-C008: “AHG Report: VLC”	HWPO_00010417-00010418
	DX 194				JVT-C028: “Context-adaptive VLC (CVLC) coding of coefficients”	HWPO_00010422-00010432
	DX 195				JVT-C088: “Adaptive Transform Coefficient Coding”	HWPO_00010627-00010632
	DX 196				JVT-C145: “Verification results for adaptive coding of transform coefficients (JVT-C088)”	HWPO_00010668-00010670
	DX 197				JVT-B001d5: “JVT (of ISO/IEC MPEG and ITU-T Q.6/16 VCEG) 2nd Meeting Report, Jan. 29 – Feb. 1, 2002”	HWPO_00011246-00011296
	DX 198				JVT-B015: “CABAC Ad Hoc Group Report”	HWPO_00011300-00011305
	DX 199				JVT-B045, “Improved Low Complexity Entropy Coding for Transform Coefficients”	HWPO_00011361-00011371

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	DX 200				JVT-B056: "Proposal of Improved 2D-VLC coding for High-Bitrate"	HWPO_00011379-00011389
	DX 201				JVT-B072: "VLC coefficients coding for high bitrate"	HWPO_00011415-00011416
	DX 202				JVT-B101: "New Results on Improved CABAC"	HWPO_00011495-00011505
	DX 203				JVT-B118r2: "Working Draft Number 2, Revision 2 (WD-2)"	HWPO_00011526-00011631
	DX 204				JVT-B-TD-00r5: "Invitation to the Second JVT Meeting, Geneva, Switzerland, Jan. 29 – Feb. 1, 2002"	HWPO_00011636-00011639
	DX 205				VCEG-O18: "Improved CABAC"	HWPO_00012281-00012286
	DX 206				VCEG-O24: "Improvements on CABAC"	HWPO_00012306-00012309
	DX 207				VCEG-O27: "Improved 2D-VLC coding for High-Bitrate"	HWPO_00012322-00012330
	DX 208				Provisional Application No. 60/341,674	HWPO_00012677-00012999
	DX 209				U.S. Patent No. 7,263,232	HWPO_00013000-00013044
	DX 210				U.S. Patent No. 6,690,307	HWPO_00013303-00013325
	DX 211				Provisional Application No. 60/367,032	HWPO_00013828-00013836
	DX 212				U.S. Patent No. 7,099,387	HWPO_00013837-00013857
	DX 213				ITU-T Recommendation H.263	HWPO_00014167-00014333
	DX 214				ITU-T Recommendation H.323	HWPO_00014334-00014461
	DX 215				"Terms of Reference for Joint Video Team (JVT) Activities"	HWPO_00142237-00142251
	DX 216				JVT-B002d2: "JVT (of ISO/IEC MPEG and ITU-T Q.6/16 VCEG) 1st Meeting and VCEG (ITU-T SG16 Q.6) 15th Meeting Reports, Dec. 2001"	HWPO_00142252-00142290
	DX 217				http://wftp3.ITU.int/av-arch/video-site/0201_Gen/ (printed on January 19, 2018)	HWPO_00142291-00142294
	DX 218				Withdrawn	
	DX 219				Withdrawn	
	DX 220				ITU-T Recommendation H.324	HWPO_00171717-00171775
	DX 221				Withdrawn	
	DX 222				Withdrawn	
	DX 223				Withdrawn	
	DX 224				U.S. Patent No. 7,095,896	HWPO_00144662-00144713
	DX 225				MPEG LA: AVC/H.264 Essentiality Chart	MPEGLA_00005122-5201
	DX 226					
	DX 227				Withdrawn	

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	DX 228				3GPP TS 36.212 v2.0.0 (2007-09), 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Multiplexing and channel coding (Release 8)	HWPO_00170248-00170277
	DX 229				“3GPP – About 3GPP” Home webpage	HWPO_00170287-00170296
	DX 230				Withdrawn	
	DX 231				Withdrawn	
	DX 232				Withdrawn	
	DX 233				Withdrawn	
	DX 234				Withdrawn	
	DX 235				Withdrawn	
	DX 236				Withdrawn	
	DX 237				Withdrawn	
	DX 238				Withdrawn	
	DX 239				Withdrawn	
	DX 240				Withdrawn	
	DX 241				Withdrawn	
	DX 242				3GPP FAQ webpage	HWPO_00170341-359
	DX 243				Withdrawn	
	DX 244				Withdrawn	
	DX 245				3GPP meetings for group R1	HWPO_00170362-00170373
	DX 246				3GPP FTP webpage for TSG RAN WG1 meeting #50	HWPO_00170374
	DX 247				3GPP FTP webpage for “Docs” directory for TSG RAN WG1 meeting #50	HWPO_00170375-00170388
	DX 248				Withdrawn	
	DX 249				Brian Classon’s email to 3GPP ListServ on August 14, 2007	HWPO_00170403-00170417
	DX 250				3GPP FTP webpage for “Reports” directory for TSG RAN WG1 meeting #50	HWPO_00170418
	DX 251				Withdrawn	
	DX 252				Withdrawn	
	DX 253				Withdrawn	
	DX 254				Withdrawn	
	DX 255				3GPP RAN WG1 Meeting #50, List of Registered Attendees, View Badges	HWPO_00170061-00170095

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	DX 256				3GPP RAN WG1 Meeting #50, List of Registered Attendees	HWPO_00170096-00170108
	DX 257				List Archives at LIST.ETSI.ORG	HWPO_00170109-00170111
	DX 258				Brian's Classon's e-mail message to RAN WG1's e-mail reflector dated August 14, 2007, as found on 3GPP's public e-mail website	HWPO_00170112-00170126
	DX 259				R1-073361_UL_channel_interleaver.doc	HWPO_00170153-00170163
	DX 260				R1-073361_UL_channel_interleaver.doc	HWPO_00175407-00175417
	DX 261				Withdrawn	
	DX 262				Withdrawn	
	DX 263				Withdrawn	
	DX 264				Withdrawn	
	DX 265				Withdrawn	
	DX 266				Withdrawn	
	DX 267				Withdrawn	
	DX 268				Withdrawn	
	DX 269				Withdrawn	
	DX 270				Tdoclist_RAN1 #50(Aug_2007).xls	HWPO_00170151
	DX 271				Motorola, 3GPP TSG RAN WG1 #50, R1-073361, "Uplink channel interleaving" ("Motorola")	HWPO_00169753-00169763
	DX 272				3GPP FTP webpage for TSG RAN WG1 meeting #51	HWPO_00175245
	DX 273				3GPP FTP webpage for "Docs" directory for TSG RAN WG1 meeting #51	HWPO_00175246-00175257
	DX 274				Withdrawn	
	DX 275				Juan Montojo's email to 3GPP ListServ on November 4, 2007	HWPO_00175270-00175280
	DX 276				3GPP FTP webpage for "Reports" directory for TSG RAN WG1 meeting #51	HWPO_00175281
	DX 277				Withdrawn	
	DX 278				U.S. Patent No. 6,732,316 ("Tong")	HWPO_00170278-00170286
	DX 279				Withdrawn	
	DX 280				Qualcomm, 3GPP TSG RAN WG1 #51, R1-075037, "Update of 36.212" ("Qualcomm")	HWPO_00017765-00017792
	DX 281				Samsung, 3GPP TSG RAN WG1 #51b, R1-080002, "Draft Report of 3GPP TSG RAN WG1 #51 v1.0.0" ("Samsung")	HWPO_00175286-00175354

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	DX 282				U.S. Patent No. 6,975,615 ("Toskala")	HWPO_00142374-00142391
	DX 283				Withdrawn	
	DX 284				Withdrawn	
	DX 285				U.S. Patent No. 6,747,946 ("Kaneko")	HWPO_00142305-00142373
	DX 286				U.S. Patent No. 5,903,820 ("Hagstrom")	HWPO_00143357-00143378
	DX 287				U.S. Patent No. 7,203,158 ("Oshima")	HWPO_00143243-00143329
	DX 288				U.S. Patent No. 6,473,467 ("Wallace")	HWPO_00017246-00017274
	DX 289				U.S. Patent No. 5,646,935 ("Ishikawa")	HWPO_00143330-00143356
	DX 290				Withdrawn	
	DX 291				Withdrawn	
	DX 292				U.S. Patent No. 6,188,717 ("Kaiser")	HWPO_00143379-00143397
	DX 293				U.S. Patent No. 6,421,527 ("DeMartin")	HWPO_00169895-00169901
	DX 294				U.S. Provisional Application No. 60/942,843 ("Papasakellariou Provisional")	HWPO_00169729-00159735
	DX 295				U.S. Patent Publication No. 2008/0304467 ("Papasakellariou Publication")	HWPO_00169698-00169713
	DX 296				U.S. Patent Publication No. 2003/0185159 ("Seo")	HWPO_00169851-00169884
	DX 297				U.S. Patent Publication No. 2006/0098568 ("Oh")	HWPO_00169885-00169894
	DX 298				Withdrawn	
	DX 299				EP Patent Publication No. 1793639	HWPO_00169968-00170020
	DX 300				Jonathan Wells, Multi-Gigabit Microwave and Millimeter-Wave Wireless Communications (Artech House, Boston 2001)	HWPO_00143232-00143234
	DX 301				"3GPP – LTE" webpage, available at http://www.3gpp.org/technologies/keywords-acronyms/98-lte	HWPO_00170191-00170198
	DX 302				3GPP TS 36.211 v2.0.0 (2007-09), Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation (Release 8)	HWPO_00170199-00170247
	DX 303				U.S. Patent No. 8,331,328 ("Papasakellariou")	HWPO_00169714-00169728
	DX 304				WIPO Publication No. 2007/081145 ("Kwak")	HWPO_00169902-00169947
	DX 305				U.S. Patent Publication No. 2006/0262871 ("Cho")	HWPO_00169736-00169752
	DX 306				Ericsson et al., 3GPP TSG RAN WG1 #47, R1-063580, "Way forward on downlink L1/L2 control signaling"	POHW_00077659

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	DX 307				Samsung, 3GPP TSG RAN WG1 Meeting #48bis, R1-071576, "Mapping of control channel elements to resource elements"	POHW_00077663-00077664
	DX 308				Ericsson et al., 3GPP TSG RAN WG1 Meeting #49, R1-072613, "Way forward on CCE-to-RE mapping"	POHW_00077698-00077701
	DX 309				Ericsson, 3GPP TSG RAN WG1 Meeting #49, R1-072470, "CCE-to-RE mapping"	POHW_00077688-00077690
	DX 310				LG Electronics, 3GPP TSG RAN WG1 Meeting #49, R1-072345, "Mapping of Control Channel Elements to Resource Elements"	POHW_00077682-00077685
	DX 311				Huawei, 3GPP TSG RAN WG1 Meeting #49, R1-072097, "E-UTRA downlink CCE to RE mapping scheme"	POHW_00077675-00077677
	DX 312				Huawei, 3GPP TSG RAN WG1 Meeting #49bis, R1-072904, "CCE to RE interleaver design criteria"	POHW_00077758-00077764
	DX 313				Motorola, 3GPP TSG RAN WG1 #49, R1-072556, "E-UTRA DL L1/L2 Invariant Control Channel Design"	POHW_00077691-00077697
	DX 314				Samsung, 3GPP TSG RAN WG1 #50bis, R1-074080, "PHICH/PDCCH to RE mapping"	POHW_00077934-00077939
	DX 315				Ericsson, 3GPP TSG RAN WG1 #51, R1-074830, "Summary on e-mail discussions on CCE-to-RE mapping"	POHW_00078049-00078050
	DX 316				Motorola, 3GPP TSG RAN WG1 #51, R1-074581, "Interleaver Design for Control Channel Element to RE Group Mapping"	POHW_00077975-00077986
	DX 317				Huawei, 3GPP TSG RAN WG1 #51, R1-074749, "Comparison of interleavers for PDCCH"	POHW_00078034-00078044
	DX 318				Ericsson, 3GPP TSG RAN WG1 #51, R1-074842, "CCE-to-RE per-Symbol Mapping"	POHW_00078051-00078053
	DX 319				3GPP TSG RAN WG1 #51, R1-081161, "Change Request"	POHW_00077400-00077460
	DX 320				3GPP TSG RAN WG1 #51, R1-080002, "Draft Report of 3GPP TSG RAN WG1 #51 v1.0.0 (Jeju, South Korea, 5-9 November, 2007)"	POHW_00077589-00077657
	DX 321				3GPP TS 36.211 V8.9.0 (2009-12)	POHW_00105577-00105659
	DX 322				3GPP TS 36.212 V8.8.0 (2009-12)	POHW_00064893-00064952
	DX 323				EP Patent No. EP 2 119 287 B1	HWPO_00182811-00182828
	DX 324				EP Patent No. EP 2 485 514 B1	HWPO_00182829-00182844

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	DX 325				EP Patent No. EP 2 229 744 B1	HWPO_00182845-00182865
	DX 326				[REDACTED]	[REDACTED]
	DX 327				[REDACTED]	[REDACTED]
	DX 328				[REDACTED]	[REDACTED]
	DX 329				[REDACTED]	[REDACTED]
	DX 330				[REDACTED]	[REDACTED]
	DX 331				[REDACTED]	[REDACTED]
	DX 332				[REDACTED]	[REDACTED]
	DX 333				[REDACTED]	[REDACTED]
	DX 334				[REDACTED]	[REDACTED]
	DX 335				Withdrawn	
	DX 336				[REDACTED]	[REDACTED]
	DX 337				3GPP TS 25.212 V7.7.0 (2007-11)	HWPO_00015565-00015667
	DX 338				[REDACTED]	
	DX 339				[REDACTED]	
	DX 340				[REDACTED]	
	DX 341				[REDACTED]	
	DX 342				[REDACTED]	
	DX 343				[REDACTED]	
	DX 344				[REDACTED]	
	DX 345				[REDACTED]	
	DX 346				[REDACTED]	
	DX 347				[REDACTED]	

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	DX 348				[REDACTED]	
	DX 349				[REDACTED]	
	DX 350				[REDACTED]	
	DX 351				[REDACTED]	
	DX 352				[REDACTED]	
	DX 353				Withdrawn	
	DX 354				[REDACTED]	
	DX 355				[REDACTED]	
	DX 356				US Patent No. 8,948,117	HWPO_00195454-00195477
	DX 357				US Patent No. 9,295,053	HWPO_00195478-00195502
	DX 358				US Patent Application Publication 2016/0165593	HWPO_00195503-00195526
	DX 359				IPR Information Statement and Licensing Declaration, Optis Wireless Technology LLC	POHW_00005613-00005618
	DX 360				IPR Information Statement and Licensing Declaration, Optis Cellular Technology LLC	POHW_00005619-00005622
	DX 361				IPR Information Statement and Licensing Declaration, Optis Wireless Technology LLC	POHW_00005623-00005636
	DX 362				IPR Information Statement and Licensing Declaration, Optis Wireless Technology LLC	POHW_00005691-00005696
	DX 363				IPR Information Statement and Licensing Declaration, Shigeru Toyoshima	POHW_00006703-00006713
	DX 364				PanOptis Patent Portfolios Presentation	POHW_00008804-00008838
	DX 365				Withdrawn	
	DX 366				[REDACTED]	[REDACTED]
	DX 367				[REDACTED]	[REDACTED]
	DX 368				[REDACTED]	[REDACTED]
	DX 369				[REDACTED]	[REDACTED]
	DX 370				[REDACTED]	[REDACTED]
	DX 371				[REDACTED]	[REDACTED]
	DX 372				[REDACTED]	[REDACTED]
	DX 373				[REDACTED]	[REDACTED]
	DX 374				[REDACTED]	[REDACTED]
	DX 375				[REDACTED]	[REDACTED]

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	DX 376			8/20/2018	[REDACTED]	[REDACTED]
	DX 377				[REDACTED]	[REDACTED]
	DX 378				[REDACTED]	[REDACTED]
	DX 379				[REDACTED]	[REDACTED]
	DX 380			8/20/2018	[REDACTED]	[REDACTED]
	DX 381				3GPP TSG-RAN WG1 #51bis R1-080128	HWPO_00195536-00195538
	DX 382				3GPP TSG-RAN WG1 #51bis R1-080436	HWPO_00195539-00195544
	DX 383				3GPP TSG-RAN WG1 #51bis R1-080439	HWPO_00195545-00195546
	DX 384				3GPP TSG-RAN WG1 #51bis R1-080440	HWPO_00195547-00195551
	DX 385				January 2018 Ericsson Presentation	HWPO_00195552-00195553
	DX 386				[REDACTED]	

Defendants reserve the right to supplement or amend this list. Defendants reserve the right to remove exhibits from this list and to object to the admissibility of exhibits on this list. Defendants reserve the right to use any exhibit listed by Plaintiffs.